

REMARKS

Claims 5 and 6 are cancelled. Claims 22 and 23 are new. Support for new Claims 22 and 23 is found in the originally-filed Claims 1, 5, and 6.

Claims 1, 3-4, 7-12, and 19-23 are active in the present application. Favorable reconsideration is respectfully requested in light of the above amendment and the remarks below.

At the outset, Applicants wish to thank Examiner Kornakov for the brief, yet helpful, discussion on September 4, 2003, which is summarized and expanded upon below.

The production of particles arising from CF-based byproducts ultimately leads to a decreased yield of semiconductor devices, and as such removal of the byproduct deposits must be undertaken to enhance yields (page 3, lines 9-11 of specification). The present Inventors have solved this critical need for improved cleaning methods by providing a cleaning solution for removing a byproduct derived from a decomposed substance of a process gas containing C and F, and deposited on a component in a process chamber of a semiconductor processing apparatus for subjecting a target substrate to a semiconductor process with the process gas, where the cleaning solution contains N-methyl-2-pyrrolidone, ethylene glycol monobutyl ether, a surfactant, and water; and where a total content of the N-methyl-2-pyrrolidone and ethylene glycol monobutyl ether is 80 to 90 wt%, and a ratio of a content of the N-methyl-2-pyrrolidone to the total content of the N-methyl-2-pyrrolidone and ethylene glycol monobutyl ether is 0.75 to 0.95 (see Claims 1 and 23).

As discussed with the Examiner, the rejection of Claims 1, 4-6, 13, 14-16, 18, and 19 under 35 U.S.C. §102 and/or §103 over Han et al alone or in view of Griesshammer is obviated by the amendment because Claim 1 has been amended to include the embodiments of Claims 5 and 6. Further, new Claim 22 contains the embodiments of Claim 6. Neither Han et al alone or in view of Griesshammer disclose or suggest the claimed invention as correctly indicated by the Office since it has not rejected Claim 6 over these disclosures in the

Outstanding Office Action. Accordingly, Applicants request withdrawal of these grounds of rejection.

As discussed briefly with the Examiner, the rejection of Claims 7-11, 20, and 21 under 35 U.S.C. §103 over Griesshammer in view of Han et al is obviated the above amendment as well. More specifically, Claim 1 has been amended to include the embodiments of Claims 5 and 6. Further, new Claim 22 contains the embodiments of Claim 6. Neither Griesshammer, nor Han et al, disclose or suggest the claimed invention as correctly indicated by the Office since it has not rejected Claim 6 over these disclosures in the Outstanding Office Action. Accordingly, Applicants request withdrawal of this ground of rejection.

As briefly discussed with the Examiner, the rejection of Claim 12 under 35 U.S.C. §103 over Griesshammer in view of Han et al and in further view of EP 0 081 355 is obviated by the amendment above. More specifically, Claim 1 has been amended to include the embodiments of Claims 5 and 6. Further, new Claim 22 contains the embodiments of Claim 6. Neither Griesshammer alone, or in view of Han et al and in further view of EP 0 081 355, disclose or suggest the claimed invention as correctly indicated by the Office since it has not rejected Claim 6 over these disclosures in the Outstanding Office Action. Accordingly, Applicants request withdrawal of this ground of rejection.

The rejection of Claim 6 under 35 U.S.C. §103 over Han et al in view of EP 0 081 355 is obviated by the cancellation of this claim.

Han et al discloses, at best, a composition having:

- a. from about 1 to 40%, and preferably 4 to 20%, of a surfactant selected from the group consisting of anionic surfactants, nonionic surfactants and mixtures thereof;
- b. up to about 10% of a builder selected from the group consisting of polyphosphates, pyrophosphates, citrates, and carbonates;
- c. up to about 2% of an amine selected from the group consisting of monoethanolamine, diethanolamine and triethanolamine;

d. water; and

e. further comprising from about 3 to 50% of a solvent, which solvent is selected from the groups consisting of:

- i) sulfolane, propylene glycol monomethyl ether acetate, dipropylene glycol monomethyl ether acetate, ethylene glycol monoethyl ether acetate, diethylene glycol monoethyl ether acetate, diethylene glycol dimethyl ether, ethylene glycol dimethyl ether, diethylene glycol diethyl ether, and mixtures thereof;
- ii) diethylene glycol monobutyl ether, ethylene glycol monobutyl ether, and N-methyl 2-pyrrolidone; and
- iii) a mixture of two solvents, the first such solvent comprising 5-17% of an acetate selected from the group consisting of ethyl acetate and n-propyl acetate, and the second such solvent comprising 15-34% of a solvent selected from the group consisting of acetone, N-methyl 2-pyrrolidone and methyl ethyl ketone, wherein the ratio of the first solvent to the second solvent may range from 1:4 to 1:2. (see Abstract)

Han et al relates to an aqueous composition in the form of liquids, sprays, gels, and pastes, which removes dried-on and cooked-on food and other difficult-to-remove soils from kitchen utensils, flatware, dishes, glassware, cookware, bakeware, cooking services, and surrounding areas in an convenient, easy, timely, and mild manner (see column 1, lines 10-15). In order to achieve the detergent composition according to Han et al, Han et al specifies that the liquid pre-spotting compositions of its invention consists of five major components. The first three (the ternary system) includes surfactants (non-ionic, anionic, and their combination), builder salts, and an amine. **The fourth component is water**, and the fifth is a solvent system that is optimized by which the efficacy of the ternary system is enhanced. In light of the above, it is clear that Han et al discloses that its detergent composition achieves the above-mentioned utility to remove dried-on and cooked-on food and soil from kitchen utensils, etc., **by requiring water**. Accordingly, the skilled artisan who desires to create an adequate detergent composition for the removing of dried-on and cooked-on food and soils

from kitchen utensils, etc., and who is reading the disclosure of Han et al, would come to the only conclusion therefrom that **water must be present** in such a detergent.

EP 0 081 355 discloses a method of cleaning and reclaiming printing screens using an ink cleaning composition containing N-methyl-2-pyrrolidone, an oxygenated solvent (e.g., butyl cellosolve and cyclohexanone), and a surfactant (see Abstract). EP 0 081 355 further discloses that “the NMP, oxygenated solvent and surfactant composition *must be non-aqueous*” (emphasis added, page 6, lines 23-24). Further, EP 0 081 355 does not disclose a detergent containing water. The Office recognizes this limitation in EP 0 081 355 by stating “EP ‘355 does not disclose the presence of water in his disclosure, as per instant claims 2 and 3” (paper number 4, page 6, lines 5-6).

The above technology disclosed by EP ‘355 relates to a method of cleaning and re-claiming printing screens using an ink cleaning composition where a non-aqueous mixture of NMP, an oxygenated sulfur, and a surfactant is utilized. Further, as discussed above, EP ‘355 specifically demonstrates that the composition described therein **must be non-aqueous** in order to effectively clean screens or desensitize the claimed printed screen for subsequent emulsion removal. In light of the above, the skilled artisan who wishes to create an effective method and composition for cleaning and/or re-claiming printing screens would read EP ‘355 and come to the only conclusion that such a method and composition **must eliminate a water altogether** in order to achieve a non-aqueous environment and be effective in the technology.

As stated above, the fact that EP 0 081 355 *teaches away* from adding water to their cleaning composition by stating that the composition “*must be non-aqueous*” (page 6, lines 23-24). Therefore, the disclosure by EP 0 081 355 teaches away from the claimed invention, which *requires* the presence of water (see Claims 1 and 7). Even more importantly, the disclosure by EP 0 081 355 teaches away from being combined with the detergent composition disclosed by Han et al which requires the presence of water as discussed above.

Applicants note that MPEP §2141.02 states: “A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Therefore, how can the Office maintain that there would be a motivation to do what the references expressly teach away from (i.e., making a cleaning solution having N-methyl-2-pyrrolidone, ethylene glycol monobutyl ether, a surfactant, and water).

In spite of the above-mentioned facts of the matter, the Office continues to maintain that it has established a *prima facie* case of obviousness because the Office maintains “the EP ‘355 reference in no way teaches away from the issue it was used to remedy, namely from considering the ratio of solvents, as being operable within the disclosure of the primary reference.” However, the Office has put the cart before the horse due to a few fatal flaws in its position and logic supporting the same.

First, in order to place the ratio of solvents disclosed by EP ‘355 into the detergent disclosed by Han et al, the skilled artisan would have to fully comply with the disclosure of EP ‘355 as a whole and remove the water of Han et al. as specifically required by EP ‘355. However, as discussed above, Han et al explicitly discloses that the absence of water will destroy its utility because it requires water to be present therein. Therefore, using the Office’s logic, the skilled artisan in one technology would have to destroy the painstaking achievements of another’s in different technology and remove a component critical to the utility of the invention therein, e.g. water.

Second, in no way would the skilled artisan understand that the ratio of solvents disclosed in EP ‘355 would “be operable within the disclosure of the primary reference” **because the Han et al specifically disclose that water must be present and EP ‘355 requires the absence of water.** There is absolutely no suggestion in EP ‘355 that the operable ratio of solvents in its non-aqueous environment (which is critical to the operation

therein) can be translated into an aqueous environment as specifically required by the technology of the Han et al reference. This is especially true since the Han et al reference emphasizes that its solvent system is engineered and optimized in a manner so that “the efficacy of the ternary system is enhanced” (see column 1, lines 50-51) **in the presence of water** (see column 1, line 49). In light of the delicate balance between the solvent system disclosed by Han et al to enhance the efficacy of the ternary system in the presence of water, it would be impossible for a skilled artisan in the art of detergent compositions for the removal of food and soils from kitchen utensils, etc. to read the disclosure of EP '355 (printer screen technology) and understand that the ratio of solvents therein, **which is disclosed to be operable only in a non-aqueous environment**, and expect an equal operable ratio of solvents in a non-aqueous environment to be operable in the aqueous environment of a completely different technology.

In light of the above, it is clearly demonstrated by the Applicants that there is no motivation to combine the teachings of Han et al and EP '355, especially since the nature of the problem to be solved is completely different, the teachings of the prior art are completely in opposite, and the knowledge of persons of ordinary skill in the art is completely different since they relate to completely different technologies. The Federal Circuit Court decided in *In re Rouffet* (47 U.S.P.Q. 2d 1453) that these are the only three possible sources for motivation to combine references. Further, the Federal Circuit Court has indicated that the Office cannot rely on the level of skill in the art to provide suggestion as absent in the combined references (*Al-Site Corp. v. VSI Base Int'l Inc.*, 50 U.S.P.Q. 2d 1161).

Since the Office cannot possibly use the level of skill in the art of a skilled artisan in two completely different technologies to supplant motivation or suggestion that is lacking in either one of the above-mentioned references and the references specifically teach away from their combination, the Office is apparently relying on the disclosure of the present application for motivation. However, this is also completely inappropriate as set forth by a recent

decision from the U.S. Federal Court in *In re Lee*, 61 U.S.P.Q. 2d 1430. The *Lee* Court indicated that the Office must provide specific motivation, hint, or suggestion, found in the references relied upon, to support a *prima facie* case of obviousness. In the present case, the Office appears to rely on the present specification for motivation, which is clearly forbidden according to the *Lee* Court. In light of this decision, Applicants respectfully request that the Office not use the present specification to combine motivation that is not present in any of the disparate disclosure of the references discussed herein. Accordingly, withdrawal of this ground of rejection is respectfully requested.

Applicants respectfully submit that the present application is now in condition for allowance. Early notice to this effect is respectfully requested. Should anything further be required to place this application in condition for allowance, the Examiner is requested to contact the undersigned by telephone.

Respectfully submitted,

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